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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,160	04/22/2004	Takamitsu Asanuma	110108.01	5738
25944	7590	11/01/2005		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER NGUYEN, TU MINH	
			ART UNIT	PAPER NUMBER
			3748	
DATE MAILED: 11/01/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/829,160

Applicant(s)

ASANUMA ET AL.

Examiner

Tu M. Nguyen

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3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/904,875.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)     | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. An Applicant's Request for Continued Examination (RCE) and an Applicant's Amendment filed on October 11, 2005 have been entered. Claims 2-3 have been canceled; and claim 1 has been amended and is pending in this application.

#### ***Drawings***

2. The formal drawings filed on April 22, 2004 have been approved for entry.

#### ***Double Patenting***

3. Claim 1 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 2 of copending Application No. 09/904,875. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 1 in the instant application is broader in scope than claim 2 of the copending Application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed.

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Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seto et al. (Japan Publication 6-117221) in view of Hirota et al. (Japan Publication 6-159037).

As shown in Figures 1 and 9 and indicated in the translated Abstract, Seto et al. disclose a device for purifying the exhaust gas of an internal combustion engine, comprising:

- a NOx absorbent (20) arranged in the exhaust system, which carries a catalyst (an alkali metal) for absorbing and reducing NOx and an oxidation catalyst (platinum) to absorb oxygen in the exhaust gas, the catalyst absorbing NOx when the air-fuel ratio in the surrounding atmosphere thereof is lean and releasing the absorbed NOx when the air-fuel ratio is stoichiometric or rich;

- a catalytic apparatus (17) for purifying NOx arranged in the exhaust system upstream of the NOx absorbent, the catalytic apparatus carries a catalyst (an alkali metal) for absorbing NOx when the air-fuel ratio in the surrounding atmosphere thereof is lean and releasing the absorbed NOx when the air-fuel ratio is stoichiometric or rich; and

- control means (50, 11) for making the air-fuel ratio in the catalytic apparatus (17) rich to release NOx therefrom and purify the released NOx by reduction, and making the air-fuel ratio in the NOx absorbent (20) rich to release NOx from the catalyst of the NOx absorbent (20) to purify the released NOx by reduction and to release oxygen from the oxidation catalyst and thus to cancel oxygen saturation or contamination on the oxidation catalyst of the NOx absorbent.

Seto et al., however, fail to disclose that the NOx absorbent also has a function of a particulate filter.

As shown in Figures 1 and 2, Hirota et al. teach that it is conventional in the art to use a particulate filter (10) which carries a NOx absorber (26) for absorbing and reducing NOx. As clearly illustrated in Figure 2, the particulate filter is a wall-flow device comprising a plurality of partition walls having pores, the partition walls carrying a NOx absorber (26) on the exhaust gas upstream side surface for absorbing and reducing NOx. A controller in Hirota et al. makes the air-fuel ratio in the particulate filter rich to release NOx and active-oxygen from the NOx

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absorber to purify the released NO<sub>x</sub> by reduction, and to oxidize the particulates trapped on the filter by the released active-oxygen. As indicated in the translated Abstract, the heating in the NO<sub>x</sub> releasing and reduction causes elevated temperature in the filter, which induces the trapped soot to be oxidized easily. It would have been obvious to one having ordinary skill in the art at the time of the invention was made, to have replaced the NO<sub>x</sub> absorbent in Seto et al. with the particulate filter taught by Hirota et al., since the use thereof would have reduced harmful soot emissions in the exhaust gas and saved fuel by inducing soot to combust at an earlier time.

Hirota et al., however, fail to teach or suggest that the trapped soot is oxidized without producing a luminous flame.

Since the heating in the NO<sub>x</sub> releasing and reduction in Hirota et al. causes elevated temperature in the filter, which induces the trapped soot to be oxidized easily, the trapped soot is also oxidized at a lower temperature. One with ordinary skill in the art also recognizes that at a lower temperature, the trapped soot in Hirota et al. is oxidized without producing a luminous flame. Moreover, since the particulate filter in Hirota et al. is operated in an exact manner as that in the pending application to oxidize the trapped soot, there is a similar functionality between Hirota et al. and the pending application. This similar functionality leads one with ordinary skill in the art to realize that the trapped soot in Hirota et al. is also oxidized without producing a luminous flame.

### *Response to Arguments*

7. Applicant's arguments with respect to the reference applied in the previous Office Action have been fully considered but are moot in view of the new ground(s) of rejection.

*Prior Art*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of one patent: Martin et al. (U.S. Patent 6,003,305) disclose a flameless thermal oxidizer for soot.

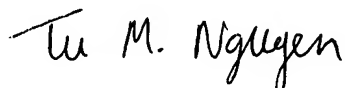
*Communication*

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Tu Nguyen whose telephone number is (571) 272-4862.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Thomas E. Denion, can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TMN  
October 30, 2005



Tu M. Nguyen  
Primary Examiner  
Art Unit 3748